

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

1. (Currently amended): An arm mechanism used for an industrial robot comprising:

an arm portion of which one-end side in a longitudinal direction is supported at a predetermined portion, while other-end side in the longitudinal direction is rotatable around a rotation axis elongating in the longitudinal direction with respect to said one-end side;

a driving portion, being apart from the rotation axis and disposed in said one-end side of said arm portion, in which a reduction gear is coupled to an output shaft of a driving motor;

a driven gear which is supported to be rotatable around the rotation axis, and connected to said other-end side of said arm portion;

a passing hole which is disposed along the rotation axis with passing through said driven gear in a manner such that said passing hole is opened to an outside of said one-end side of said arm portion so as to communicate with said other-end side of said arm portion; and

a scissors gear which is disposed on an output shaft of said reduction gear ~~so as to mesh with said driven gear~~, said scissors gear comprising:

a main spur gear and a sub-spur gear overlapping with each other and meshing with said driven gear;

a spring urging the main spur gear and the sub-spur gear in opposing turning directions;

accommodating grooves opposingly recessed in overlapping faces of the main spur gear and the sub-spur gear, respectively, to internally accommodate said spring, each of the accommodating grooves having a hole in a bottom thereof; and

spring receiving members, each pressingly inserted into the corresponding hole of each of said accommodating grooves, respectively, with said spring being held between the spring receiving members such that a center of said spring in an elasticity direction is coincident with said overlapping faces.

Claim 2 (Canceled).

3. (Currently Amended): The arm mechanism according to claim ~~2~~ or 4 1, wherein said scissors further gear comprises:

a slider which is disposed in a manner that said slider is fitted into one of said main spur gear and said sub-spur gear, and movement in the turning directions of another one of said main spur gear and said sub-spur gear is allowed; and

an engaging member which engages with said main spur gear and said sub-spur gear via said slider in an overlapping manner.

Claim 4 (Canceled).

5. (Currently Amended): The arm mechanism according to claim ~~[[2]]~~ 1, wherein a gap is provided between inner walls of said accommodating grooves and said spring receiving members to allow the spring to expand or contract in the opposing turning directions due to relative movement of the main spur gear and the sub-spur gear.

Claim 6 (Canceled).

7. (Currently Amended): The arm mechanism according to claim ~~[[2]]~~ 1, wherein the accommodating grooves are provided at positions which are symmetrical with respect to a center of the turning directions of the main spur gear and the sub-spur gear.